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ABSTRACT

The current emphasis in education on accountability is tending toward "push-button accountability." The challenge is to evaluate access and retention as well as other educationally relevant goals to define "quality" or "accountability." In higher education, accountability should be proven through assessment and should consist of proof that what one says students receive from the educational experience is what they really get. Radiologic technology programs have traditionally gone beyond the minimal requirements set forth for accountability in colleges. The demand for accountability will lead to new ways to prove quality. The concept of value-added education will become more important and will be increasingly used as a measure of quality. Basic questions that will be asked can be subdivided into Access indicators and Quality indicators. The radiologic technology educator will need to support outcomes measures. The profession has adopted accountability demands as can be seen in the "Essentials and Guidelines of an Accredited Program for the Radiographer." In an "outcomes" environment, there is a definite need to be proactive. Admissions standards in radiography and radiation therapy with their focus on equity represent a sample action strategy. The "Essentials" allow for institutional prerogative while focusing on matters of objectivity so that programs may choose students they feel will be productive radiographers. (23 references) (YLB)

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ACCOUNTABILITY AND THE NEW ESSENTIALS

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Introduction

The focus of this seminar will be to give educators a description of the current emphasis in education on accountability, and its relationship to the radiologic technology *Essentials*. We will discuss the concept of accountability, including the missteps towards "push-button accountability", how accountability should be sought, and how these relate to the new *Essentials*. A proactive approach will be emphasized as a guide to "survival", and an example in admissions will be given.

Step One - Outcomes Worksheet

The first thing I would like to have you do is select an admissions predictor such as Intellectual capacity, list a measure that you use, and then describe how you measure that in an intermediate manner (while the student is in school). Then give your preliminary conclusions as to its use. Then list a long-range outcome that can is measurable and relatable to that admissions predictor, what your conclusion(s) would be, and a recommended action.

The Drive Towards "Push-Button Accountability"

The chief executive officer of the American Association of Community and Junior Colleges, Dale Parnell, has noted in his book Dateline 2000 - The New Higher Education Agenda (1990), that the public and media are demanding a simple and understandable basis for making judgements about educational quality. One of the early catalysts in this movement was the performance funding system developed in the state of Tennessee

(Bogue and Brown, 1982), which awards or denies state funding based on how students perform on standardized tests. In the health professions, this emphasis is seen in "funding priority number one" of the Model Education Projects for Health Professions:

> Applications which emphasize better *outcomes measures* for health professions education to assist health professions schools in the evaluation of outcomes relative to faculty effectiveness and instructional methodology. (Bureau of Health Professions, 1989)

The A Nation At Risk report, issued now eight years ago, is another example of calls for accountability for educators and education. In some cases, unfortunately, this movement towards outcomes and accountability has led to a "push-button accountability" mindset on the part of societal leaders. Parnell has described the perceived "stagnation" in ACT and SAT scores in the ten year period of 1977 to 1987. That is, average ACT/SAT scores have remained fairly constant in this period, and thus, the quality of American education is seen as similarly stagnant.

This is not only an erroneous assumption (the College Board and American College Testing Program have urged not to use these scores in a blanket judgement of quality), Parnell argues that we can perhaps assume that quality has, in fact, increased. It is well known that a wider spectrum of the high school population is taking the ACT/SAT. Formerly, the top 25% of high school students took this test, whereas now, even "C-level" students take the exam.

An example of the media commenting on this "problem" can be seen in the most recent issue of the Atlantic. In an

editorial/essay paid for by the Rockwell International Corporation, Denis Doyle, a "widely read" education analyst, makes the following comment:

> Test scores have remained relatively static while expenditures have climbed dramatically - in the eighties, real spending for education increased by 30 percent, the largest sustained increase in history.

By way of analogy, how many of you have noted a dramatic increase in seriously underprepared students entering your programs in the last, say 5 years? Now most of us, in tandem with our schools, have responded very well to this demand. I still have, for example, a 100% pass rate on the registry, though I would hesitate to compare scores. The populations are so different, for example, our average student age has increased by 6 years in a five year period.

Another poor measure of quality, according to Parnell, is "who gets into college." The media especially tends to focus on this. That is, the standards of admission to a college are more often cited than who (or what the individual) gets out of college.

In past years access to college (also termed "equity") was a concern of the people. The entire community college concept is an outgrowth of this concern. The 1979 Carnegie Council report strongly stressed equity.Today quality and accountability are prime issues. We have probably all heard the term "open door" now called a "swinging" or "revolving" door. Now federal regulations require accrediting agencies to "place a greater emphasis on the consistent assessment of student

achievement as a principal element in the accreditation process" (Julian, 1989). Parnell believes that the challenge for two-year colleges will be to provide both access and quality instead of viewing these as opposites. Our challenge will be to evaluate access and retention, as well as a variety of other educationally relevant goals, in defining our own "quality" or "accountability."

The True Meaning of Accountability

In higher education, accountability will be proven through assessment. Thus, accountability in education will consist of proof that what we *say* students receive from the educational experience is what they *really get*. Radiologic technology programs have traditionally gone beyond the minimal requirements set forth for accountability in colleges - the provision of grades and diplomas. We have the registry exam, and often measure our quality in terms of employment of graduates. Additionally, we have always had a strong committment to relevancy in education.

Yet we must now assume that our view of accountability matches that of others, or that one or two measures can be seen as appropriate. The demand for accountability will lead us to new ways to prove quality. Various reform reports and discussions, for example, Integrity in the College Curriculum (Association of American Colleges), Transforming the State Role in Undergraduate Education (Education Commission of the States), Time for Results: The Governors' 1991 Report on Education, and Building Communities: A Vision for a New Century, all point to

a variety of basic questions applicable to all colleges and universities:

- How clearly are the goals and purposes of the college, and of the college program, communicated to students and to the public? Do students understand the "why" of their learning?
- What is the congruency between the objectives of individual courses and the overall educational goals of the institution?
- How can colleges and universities help students develop a greater sense of belonging, and a deeper involvement in the teaching-learing process, without overwhelming an already busy faculty?
- How can colleges and universities improve the quality of internal communications and consistent feedback among students, faculty, staff, and administration?
- How can colleges and universities best identify and help students having problems early in the term without reducing academic standards? How can college dropout and failure rates be reduced?
- How can colleges and universities best use instructional technology to enhance the quality of learning without losing the warm human touch?
- How can colleges and universities best evaluate the quality of student learning and the overall effectiveness of the institution?

Parnell notes again that assessment is going to move higher education beyond an emphasis on classroom grades. However, these moves have not been totally comprehensive. In many cases, "assessment" still means student testing. In 1984 eight states had a formal collegiate assessment policy, by 1990 35 states did. In terms of colleges, a survey conducted by Cowart (1990) showed that, in 1988, of 675 two-year colleges:

- 61% used academic progress and employment outcomes measures in the assessment of institutional effectiveness.

- 35% measured student learning skills outcomes in the assessment of institutional effectiveness.
- 55% used student satisfaction to measure institutional effectiveness.

The basic question to be asked in assessment is: What level of knowledge is needed for an associate or baccalaureate degree? The secondary question often asked is: What value have we added to individual's lives as a result of their time with us? This second concept of *value-added education* will become more important, and increasingly used as a measure of quality. McClain (1984) has described this value-added approach as providing the student with "integrity" in the pursuit of a degree. Astin (1984) wants to focus on changes in students between the beginning and end of their college careers, noting that "true excellence resides in the ability to affect students favorably, to enhance their intellectual development, and to make a positive difference in their lives."

Basic questions that will be asked can be again subdivided into Access indicators and Quality indicators:

Access Assessment Indicators

1. The number of students completing certificate and degree programs based upon initial college entry aspirations.
2. Overall institutional student retention rate.
3. Percent of feeder high school graduates attending college.
4. Proportion of students from low-income-families attending college.
5. Student opinions about the registration and course placement process.

Quality Assessment Indicators

1. Analysis of student academic achievement and process.
2. Analysis of student affective development.
3. Analysis of job placement rates.
4. Securing opinions about program quality from students, alumni, and employers.
5. Analysis of performance after transfer from a two- to four-year college or from a four-year college to graduate school.

The primary driving force in assessment will be accrediting bodies working through the self-study process, with funding a close second or parallel driving force. The challenge will be to institutionalize the assessment process. An example of a college that institutionalized this process is Broward Community College in Florida. Wilkinson and Green (1989) describe how pressure from the state and accrediting agencies led the college to initiate an Institutional Effectiveness and Assessment Project possessing four interrelated components:

1. A revision of BCC's mission statement to incorporate a new section on institutional values.
2. A Course Outline Review Project, designed to examine the purpose and expected educational outcomes of individual courses.
3. The creation of 20 task forces to define expected outcomes for departments and degrees/certificates.
4. The formation of an Educational Planning Committee to recommend a college planning process and a format for the plan.

Assessment does not consist of one specific format. But to be effective, it must consist of:

1. Broad-based involvement of faculty and administrators;

2. Establishment of a clearly defined purpose appropriate to collegiate education;

3. Formulation of educational goals consistent with the institution's purpose;

4. Development of procedures for evaluating the extent to which these educational goals are achieved; and

5. Use of the results of these evaluations to improve institutional effectiveness. (Southern Association of Colleges and Schools, 1989)

Though many new demands will be placed upon the radiologic technology educator in such an environment, it is both futile and folly to resist such developments. The traditional indicators of quality - the toughest admissions standards, the most Ph.D.'s, the most research, and the most dollars - will no longer be valid. Suddenly, institutions such as Northeast Missouri State University - with no previous national recognition, but a strong assessment policy - have been thrust into the national limelight (Smith,1989). We will be allowed to show what we have known for many years - that the average graduate of a radiologic technology program possesses skills, knowledge and abilities at least equal to that of an average graduate of <u>any other</u> program in the college. There is a need to support outcomes measures as they are:

1. Ultimately patient-oriented.

2. Designed to emphasize basic skills.

3. Process-oriented; that is, they allow the *educator* to develop the process as s/he sees fit.

4. A form of quality assurance in education.

The New Essentials and Accountability

The profession's adoption of these demands can be seen in

the recently revised and adopted *Essentials and Guidelines of an Accredited Program for the Radiographer*. Previously, accountability demands were quite limited in the *Essentials*, consisting of only a few short sentences noting that program evaluation was "necessary." Though outcomes are stressed throughout the *Essentials*, now program evaluation is described as follows:

> Ongoing, systematic program self-evaluation should consider outcomes related to the student, the institution, and society. Self-evaluation should assist the program in decision-making, enhancing input, and improving processes. All staff and faculty should be involved in program self-evaluation efforts.
>
> Institutional and program missions should be considered as a program evaluates its goals and considers revisions based on curriculum review and other elements of the evaluation process.
>
> Program evalaution should focus on behavioral changes in students as a result of the educational experience and should include assessment of the following graduate outcomes:
>
> 1. Knowledge - Understanding of general and specific facts, processes, theories, and methodologies.
> 2. Skills - Attainment of competencies to include academic, clinical, communicative, interpersonal,and leadership.
> 3. Values and Beliefs - Development of appropriate professional attributes.
> 4. Interactions and Relationships - Acceptance by the institution, community, and professional as a practitioner.
>
> Ongoing program evaluation should include, but is not limited to, assessment of such items as:
>
> 1. Attrition/retention/academic deliquency rates and reasons.
> 2. Average length of time to program completion.

3. Student characteristics in comparison with other students enrolled in the institution in areas such as grade distribution, membership in professional societies, honors, and awards.

4. Number of graduates in specified employment settings or in other types of education.

5. Relevance of employment setting to the educational setting.

6. Percent of graduates passing credentialing exams (with number of attempts) and mean exam scores.

7. Follow-up studies of alumni and employer satisfaction.

Proactive Accountability

In an "outcomes" environment, there is a definite need to be proactive rather than reactive. In a recent Change, Edgerton (1990) has described how we are in charge of how assessment is done, noting also that we must "play to win and be clear what we mean by winning." Thus winning will not encompass merely keeping score (that is, for example, tabulating registry results) but improving the score and telling how the score was improved. Educators are empowered in such a setting as they define the questions to be asked. In general, outcomes assessment will need to be developed as follows:

1. Define goals carefully

2. Choose a few simple but meaningful measures to assess outcomes.

3. Develop the process.

4. Be able to show a change, or if appropriate, a validation of the status quo.

5. Do it for yourself, not some unseen external organization.

6. Document your efforts concisely.

7. Be familiar with the institution's overall outcomes assessment policy (Camassamimo, 1990).

A Sample Action Strategy - Admission Standards

Admissions standards in radiography and radiation therapy have, for many years, focused on equity. These standards reflect concerns of the Carnegie Council of the late 1970's, which found many questionable policies among colleges and universities regarding admissions. For example, Jung and colleagues (1976; quoted in the 1979 Carnegie Council Report) found that, of 12 colleges surveyed:

- Five lacked written policy;
- One offered a basic promise of employment in its literature;
- One employed commission-based admissions representatives; and
- Five admitted students that did not meet stated requirements.

The Carnegie Council felt that economic factors led to this unintentional lack of responsibility in admissions. Thus, even very good colleges faced with student shortages engaged in tactics such as "bait and switch" - attracting students with one program at first but then "funneling" them into another, or "negative sell" - making claims that do not exist. Another potentially negative tactic, that of using "pre-professional" periods of study for screening is mentioned in the 1979 Carnegie Council report and directly addressed in the Essentials. That is, some colleges admitted more students than they had slots for clinical, and used the pre-professional period (eg., a college semester) as a screening process.

This does not appear to be a problem currently in radiography . The Essentials for radiography appear to be sufficiently broad (allowing for institutional perogative and distinctiveness) while focusing on matters of objectivity (published criteria that should be periodically evaluated) to allow programs to choose the students they feel will be productive radiographers. Educators must note that the current legal climate emphasizes "fairness" (Ward and Diaz, 1989), also termed "reasonableness" (Rose, 1988). Ward and Diaz note that forbidding the wearing of "long dangling earrings" in the clinic may be appropriate if it can be reasonably assumed that these will compromise patient care; they cannot be forbidden because the director dislikes them. Similary, making such a note in the admissions file (eg.,student wore long, dangling earrings to interview) would be legal suicide.

Thus, there is now a concurrent emphasis on equity and access in admissions. From a personal perspective, I know that I had to, in the past, sometimes admit students that I knew had no business being in patient care. The state of Illinois recognized, however, that in limited admissions programs there needed to be guidelines that recognized which students were "best qualified" for admission into a program. The process was left up to the programs and colleges.

There is an art of admitting students as well as a science, and such a policy allows programs to emphasize both "objective" standards such as ACT scores and high school grades, as well as "subjective" criteria such as interviews. This does

not absolve responsibility, however. As Chapman (1981) noted, if we choose individuals based on criteria that simply indicate that they resemble previous generations of radiographers, we might have "good" success while eliminating candidates with potential. This resembles Edgerton's comment of only keeping score - we know that we have graduated a set of "good" radiographers, but have no way of knowing if we graduated the "best" radiographers possible, or if we can move from "good" to "best".

Similarly, tests such as the Myers-Briggs, though they bring good objective, useable data for counseling purposes, are inappropriate admissions tests. The APA (American Psychological Association) has gone on record as considering such use of psychological tests as unethical, and also probably legally indefensible. Some appropriate uses of this test are described in McCauley and Morgan (1982). Ragle and Ross (1983) were unable to draw any correlation in radiologic technology between program retention/attrition and personality as measured by the MBTI; it is questionable whether such studies should even be conducted. In this case, we are asking the wrong questions.

Rezler (1983) has developed an excellent correlation of selection predictors (intellectual, nonintellectual, biographical, and psychomotor) and outcome measures (immediate, intermediate, and long-range) of potential value to admissions criteria decision-makers. These are reviewed in Table I in a revised fashion usable by radiologic technology programs.

A variety of information will have to be kept, and related to the standards. For example, a program director might

choose to correlate program GPA with high school or previous college GPA as an intermediate outcome related to an intellectual predictor. A long-range outcome in terms of professional growth could be maintenance of licensure in a licensure state (especially those with a CE requirement) or number of students advancing into further education. There is no need to focus on all possible predictors - what is important, as mentioned earlier, that the educator focus on one or two simple but significant measures of quality. Then, act on the "score" - give the reason(s) for maintaining the standard or revise it as needed.

Another example can be seen in terms of psychomotor predictors. If programs find that they are accepting bright students who do well in class but lack clinical skills, there may be a need to address this in admissions. If a program chooses to ignore this, it would be acceptable with one qualifier - they must then address the problem in some other way. So long as the outcome is acceptable - a competent group of radiographers - the process is definable by the institution or educator. A strategy such as simple dismissal would be unacceptable, but a "feedback loop" such as making students repeat clinical rotations in which competencies were failed might be.

This point is often missed by educators in site visits, at least some that I have been on. The assumption often is that we are "telling them what to do" or sometimes worse, telling them to do things that are not possible. I have circumvented this by asking first *what* is important - for example, in clinical

education, I will ask what it is, exactly, that they think should be looked at in clinical evaluation (opinions of technologists, etc.) and then ask them to show me how they do this.

In summary, I think this shows how the *outcome* is important whereas in the past we were more concerned that the *process* was defined according to certain criteria. The process is important only in that it must exist and be equitable.

Conclusion - Outcomes Worksheet

I have, on the overhead, an outcomes worksheet that is complete. (Go over worksheet).

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Table I

Predictors of Success and Outcome Measures
in Admissions

Predictor	*Intermediate Outcomes*	*Long-Range Outcomes*
Intellectual (verbal and quantitative ability, knowledge)	Success in first year of school; GPA, attrition, no delay in progress	Professional knowledge Professional growth
Nonintellectual values attitudes personality interests	Peer, faculty, practitioner interactions Patient Care Clinical Grades Coping with stress	Similar to Intermediate
Demographic	Choice of profession Specialty choice	Specialty; Supervision, Teaching, Administration
Psychomotor	Lab skills Clinical skills	Practice skills

Figure 1

Outcomes Worksheet

Predictor -

Measures Used -

Intermediate Outcome Measured -

Conclusion(s) -

Long-Range Outcome Measured -

Conclusion(s) -

Action Undertaken -

Figure 2

Completed Outcomes Worksheet

Predictor - Intellectual

Measures Used - ACT Score

Intermediate Outcome Measured - First year G.P.A.

Conclusion(s) - A *t*-test of means showed that students with an ACT of 20 or above had a significantly ($p < .05$) higher G.P.A.

Retain ACT as admission criteria based on intermediate outcomes.

Long-Range Outcome Measured - Professional knowledge as indicated by employers on satisfaction survey.

Conclusion(s) - Professional knowledge of graduates with an ACT of 20 or above was <u>not</u> significantly higher based on a *t*-test of means as rated by employers (rating of graduates 20 or above = 3.1 on a 5 point scale; 3.0 of graduates with less than 20 ACT)

Action Undertaken - ACT as predictor is retained due to good academic predictability; the possibility of using another predictor for long-term/ professional knowledge will be explored.